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**COMMITTEE OF EXPERTS ON THE TRANSPORT OF DANGEROUS GOODS**

**Sub-Committee of Experts on the Transport of Dangerous Goods**
**(Thirteenth session,**
**Geneva, 7-17 July 1997,**
**agenda item (3 (d))**

# DRAFT AMENDMENTS TO THE MODEL REGULATIONS ON THE TRANSPORT OF DANGEROUS GOODS

## Other draft amendments

## Definition for substances related to self-reactive substances

## Transmitted by the Expert of the United States of America

1. The difficulty of classifying a substance as a substance related to a self-reactive substance (SRSRS) in accordance with 2.4.2.3.1.1(b) has been noted in previous Sub-Committee discussions. The provision is vague and open ended in that any substance with a self-decomposition temperature greater than 75 °C can be considered as a SRSRS. In the opinion of the expert from the United States, the definition should be clarified.

2. In the ninth revised edition of the UN Recommendations the definition of substances related to self-reactive substances in paragraph 14.2.2.1.2 (paragraph 2.4.2.3.1.1(b) in the reformatted text) and paragraph 4.4.4 (not found in the reformatted text) cross refer to each other, this implied that an SRSRS is a substance which may have explosive properties because it fails one or two tests of Test Series 1 and 2 of Class 1. It is also implied that a SRSRS is thermally hazardous because the SADT is 75 °C or higher.

3. For reasons discussed below, the description of SRSRS in 2.4.2.3.1.1(b) is confusing and not consistent with the description of substances which may be assigned to Division 4.1.

4. First, the reference to the SADT in the SRSRS definition gives the impression that SRSRS substances are thermally unstable. This is contrary to the general philosophy of the Recommendations where substances that are stable at temperatures higher than a maximum possible ambient temperature are regarded as thermally stable. This is evidenced in several provisions. For example:

- Explosives are required to be stable at temperatures up to 75 °C;

- Organic peroxides and self-reactive substances are required to be transported under temperature control if the SADT is less than 50 °C or 55 °C, respectively; and

- The pressure retention capabilities of packagings is evaluated at 55 °C.

5. Therefore, it follows that substances related to self-reactive substances which by definition have an SADT greater than 75 °C are *thermally stable* and should not be subject to the Recommendations on the basis of their thermal stability.

6. Second, the name "substances related to self-reactive substances" is misleading in that substances that could be assigned to Division 4.1 are not necessarily related to self-reactive substances. This is most clearly evidenced by the different test procedures that are used in classifying self reactive substances and SRSRS. Also, self-reactive substances are thermally unstable while SRSRS are thermally stable. The difficulty caused by 2.4.2.3.1.1(b) can be corrected by the proposals below.

**Proposals**

7. Considering that substances assigned to Division 4.1 are most closely related to desensitized explosives, the following amendments are proposed:

(a) The definition for desensitized explosives should be numbered 2.4.2.4.1;

(b) A new paragraph 2.4.2.4.2 should be added as follows: "Other solid substances that are not self-reactive substances as defined in 2.4.2.3.1.1(a) and that are not of Class 1 or Class 5 may be assigned to Division 4.1 on the basis of 4.4.4 (refer to the 9th revised edition text. *Note: This text is not covered in ST/SG/AC.10/R.505/Add.1*) UN 2956, UN 3241, 3242 and UN 3251 are such entries;

(c) Delete paragraph 2.4.2.3.1.1(b);

(d) Delete the wording "and related" from 2.0.1.1 (in the description of Division 4.1), 2.0.3(c), 2.4.1.1(a), 2.4.2, 2.4.2.1(b) and 2.4.2.3.2;

(e) Revise 2.4.2.3 to read: "Division 4.1 *Self-reactive substances*";

(f) Delete the words "and related" in the Table of Contents (see page 16 of -AC.10/R.505) and 1.21 on page 7;

(g) Delete paragraph 2.4.2.3.2.2 (The examples of UN entries would be transferred to 2.4.2.4.2) and renumber paragraph 2.4.2.3.2.3 as 2.4.2.3.2.2;